



# ENVIRONMENTAL CONSEQUENCES



# FORESTS

IMPACTS VARY IN DIFFERENT KINDS OF FORESTS.

SUB-ARCTIC BOREAL FORESTS ARE LIKELY TO BE PARTICULARLY BADLY AFFECTED, WITH TREE LINES GRADUALLY RETREATING NORTH AS TEMPERATURES RISE.

IN TROPICAL FORESTS SUCH AS THE AMAZON, WHERE THERE'S ABUNDANT BIODIVERSITY, EVEN MODEST LEVELS OF CLIMATE CHANGE CAN CAUSE HIGH LEVELS OF EXTINCTION.



# POLAR REGIONS

## CLIMATE CHANGE IN THE ARCTIC

AVERAGE AIR TEMPERATURES IN THE REGION HAVE INCREASED BY ABOUT **5°C** OVER THE LAST **100 YEARS**.

RECENT DATA SUPPORTS THE VIEW HELD BY MANY POLAR SCIENTISTS THAT THERE'LL BE ALMOST NO SUMMER SEA ICE COVER LEFT IN THE ARCTIC IN THE NEXT FEW DECADES.

THIS HAS SEVERE IMPLICATIONS — NOT JUST LOSS OF HABITAT THAT POLAR BEARS AND SEALS DEPEND ON, AND KNOCK-ON EFFECTS ON LOCAL PEOPLE, BUT ALSO DRAMATIC CHANGES TO THE ENTIRE NORTHERN HEMISPHERE.

## CLIMATE CHANGE IN ANTARCTICA

THE ANTARCTIC ICE SHEET IS THE LARGEST SINGLE MASS OF ICE ON EARTH. IT COVERS ALMOST **14 MILLION** SQ KM AND CONTAINS **30 MILLION** CUBIC KM OF ICE — ACCOUNTING FOR AROUND **90%** OF ALL FRESH WATER ON THE EARTH'S SURFACE.

THIS ICE PLAYS A VITALLY IMPORTANT ROLE IN INFLUENCING THE WORLD'S CLIMATE, REFLECTING BACK THE SUN'S ENERGY AND HELPING TO REGULATE GLOBAL TEMPERATURES.



## SEA LEVEL RISE

PARTS OF THE WEST ANTARCTIC PENINSULA ARE AMONG THE FASTEST-WARMING PLACES ON EARTH. ALTHOUGH THE ANTARCTIC ICE SHEETS ARE UNLIKELY TO MELT ENTIRELY, EVEN SMALL-SCALE MELTING IS LIKELY TO HAVE SIGNIFICANT EFFECTS ON GLOBAL SEA LEVEL RISE.



# WATER

## RIVERS AND LAKES

RIVERS AND LAKES SUPPLY DRINKING WATER FOR PEOPLE AND ANIMALS - AND ARE A VITAL RESOURCE FOR FARMING AND INDUSTRY.

FRESHWATER ENVIRONMENTS AROUND THE WORLD ARE ALREADY UNDER EXCESSIVE PRESSURE FROM DRAINAGE, DREDGING, DAMMING, POLLUTION, EXTRACTION, SILTING AND INVASIVE SPECIES.

CLIMATE CHANGE - COMBINED WITH THESE STRESSES - MAKES IMPACTS WORSE. EXTREMES OF DROUGHT AND FLOODING WILL BECOME MORE COMMON, CAUSING DISPLACEMENT AND CONFLICT.

## OCEANS AND SEAS

### IMPACTS ON OUR CORAL REEFS

CORAL REEFS ARE PARTICULARLY AT RISK. SENSITIVE CORAL AND ALGAE THAT LIVE ON IT ARE STARVED OF OXYGEN, CAUSING DRAMATIC BLEACHING AND POSSIBLY THE EVENTUAL DEATH OF THE CORAL.

IF GLOBAL WARMING REMAINS ON ITS UPWARD PATH, BY 2050 JUST 5% OF AUSTRALIA'S GREAT BARRIER REEF — THE WORLD'S LARGEST CORAL REEF — WILL REMAIN.

IT'S NOT ONLY A TRAGEDY FOR WILDLIFE: AROUND HALF A BILLION PEOPLE RELY ON FISH FROM CORAL REEFS AS THEIR MAIN SOURCE OF PROTEIN.

## OCEANS AND SEAS

### WHY ARE OCEANS IMPORTANT?

OCEANS ARE VITAL 'CARBON SINKS' — MEANING THAT THEY ABSORB HUGE AMOUNTS OF CARBON DIOXIDE, PREVENTING IT FROM REACHING THE UPPER ATMOSPHERE.

BUT INCREASED WATER TEMPERATURES AND HIGHER CARBON DIOXIDE CONCENTRATIONS THAN NORMAL, WHICH MAKE OCEANS MORE ACIDIC, ARE ALREADY HAVING AN IMPACT.

## MELTING GLACIERS

IN MOUNTAINOUS REGIONS, MELTING GLACIERS ARE IMPACTING ON FRESHWATER ECOSYSTEMS. HIMALAYAN GLACIERS FEED GREAT ASIAN RIVERS SUCH AS THE YANGTZE, YELLOW, GANGES, MEKONG AND INDUS. OVER A BILLION PEOPLE RELY ON THESE GLACIERS FOR DRINKING WATER, SANITATION, AGRICULTURE AND HYDROELECTRIC POWER.



## TIGERS

TIGER NUMBERS IN THE WILD HAVE DECLINED TO AS FEW AS 3,200, LARGELY DUE TO POACHING AND HABITAT LOSS. CLIMATE CHANGE IS LIKELY TO RESULT IN INCREASING SEA LEVELS AND FURTHER RISK OF FIRE IN THE ALREADY FRAGMENTED HABITATS WHERE TIGERS LIVE.

## SNOW LEOPARDS

WARMING IN THE HIMALAYAS HAS ALREADY OCCURRED AT THREE TIMES THE GLOBAL AVERAGE. THIS IS PRIME SNOW LEOPARD HABITAT AND CONTINUED WARMING WILL CAUSE THEIR RANGE TO SHRINK AS THE TREELINE MOVES HIGHER UP THE MOUNTAINS. THIS WILL NOT ONLY FRAGMENT AND ISOLATE SNOW LEOPARD POPULATIONS, BUT IT WILL SEVERELY AFFECT THEIR PREY TOO.

## POLAR BEARS

THE ARCTIC IS WARMING ROUGHLY TWICE AS FAST AS THE GLOBAL AVERAGE, CAUSING THE ICE THAT POLAR BEARS DEPEND ON TO MELT AWAY. THE SEA ICE IS MELTING EARLIER AND FORMING LATER EACH YEAR. THIS MAKES IT MORE DIFFICULT FOR FEMALES TO GET ONTO LAND IN LATE AUTUMN TO DEN, AND ONTO THE SEA ICE IN SPRING TO FEED. IT MEANS BEARS ARE FASTING FOR LONGER — DRAMATICALLY REDUCING THEIR BODY WEIGHT AND PHYSICAL CONDITION AND MAKING IT HARDER FOR THEM TO SURVIVE THE SUMMER SEASON.

## ORANG-UTANS

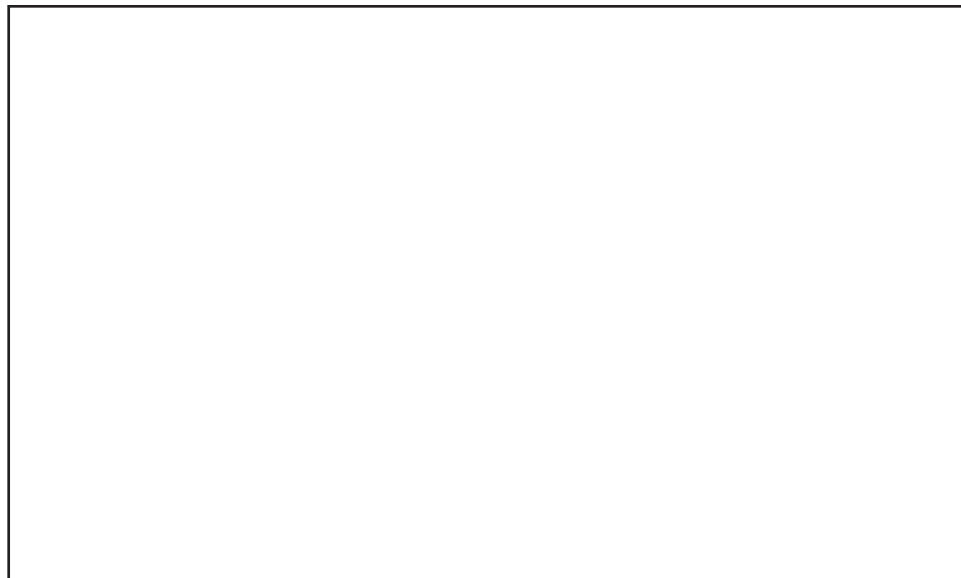
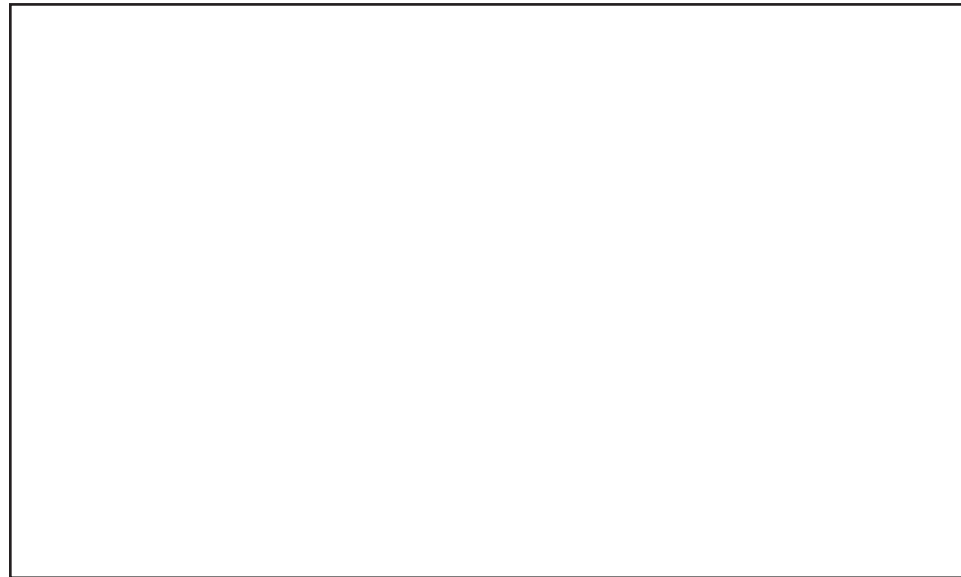
FOR ORANG-UTANS IN BORNEO — WHICH ARE ALREADY AT RISK BECAUSE OF DEFORESTATION, FOREST CONVERSION AND ILLEGAL HUNTING — ONE OF THE FIRST EFFECTS OF CLIMATE CHANGE IS LIKELY TO BE FOOD SHORTAGES CAUSED BY UNUSUAL RAINFALL PATTERNS. THEY'RE JUST ONE OF THE MANY SPECIES THAT WILL BE AFFECTED.

## ASIAN RHINOS

GREATER ONE-HORNED RHINOS LIVE ON FLOODPLAIN GRASSLANDS IN NORTHERN INDIA AND NEPAL. THEY RELY ON THE ANNUAL MONSOON TO BRING SUFFICIENT AND TIMELY RAIN, TO REPLENISH THE VEGETATION THEY FEED ON. BUT A CHANGING CLIMATE COULD DISRUPT THIS SEASONAL PATTERN AND BRING REGULAR DROUGHTS OR FLOODS.

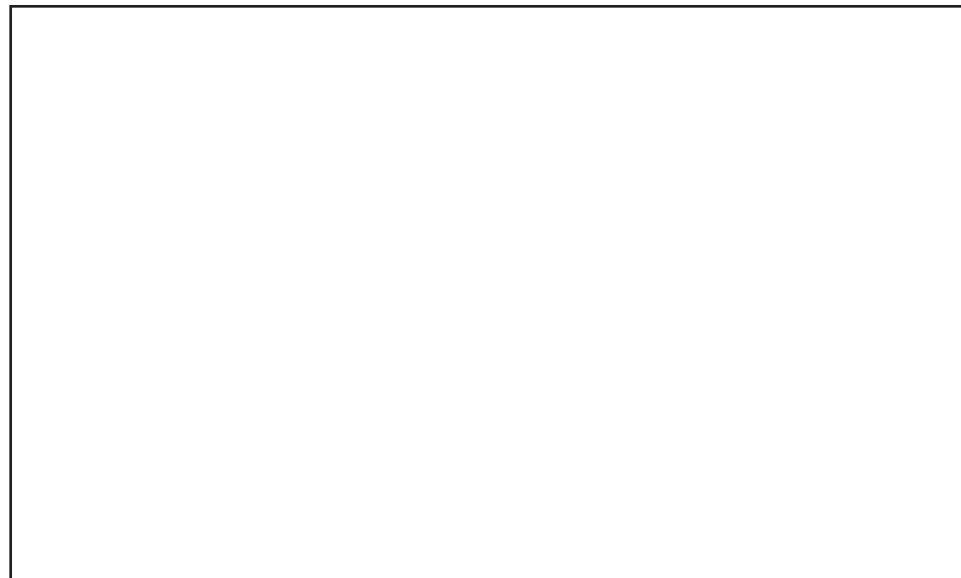
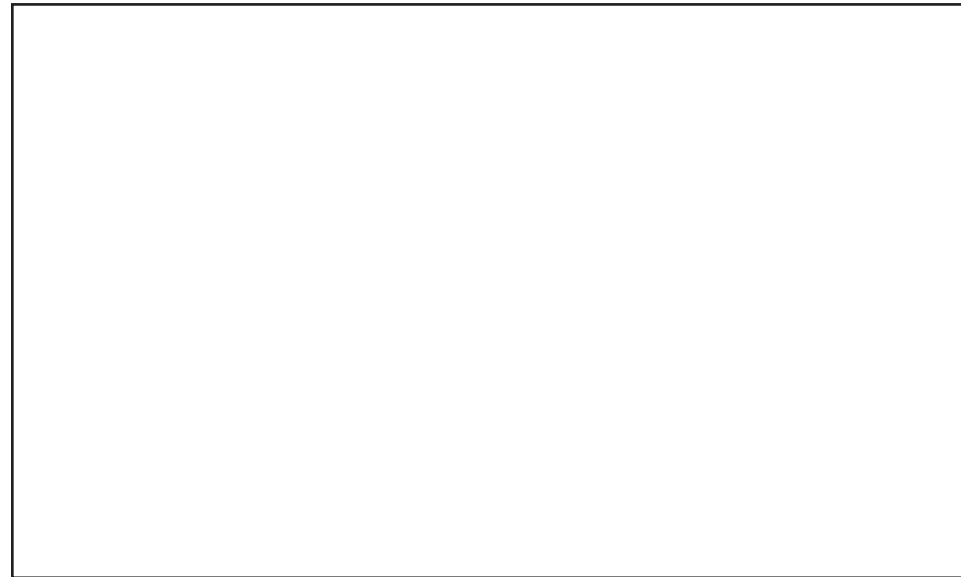
## AFRICAN ELEPHANTS

IN AFRICA, CHANGES IN RAINFALL WILL EITHER BRING TOO MUCH RAIN — CAUSING FLOODS — OR TOO LITTLE RAIN — BRINGING MORE DROUGHT AND WILDFIRES. THESE CHANGES MAY CAUSE SOME AREAS TO SIMPLY BECOME UNSUITABLE FOR CERTAIN SPECIES TO LIVE IN. AFRICAN ELEPHANTS CAN DRINK UP TO **225 LITRES** OF WATER EACH DAY, SO CHANGING WEATHER PATTERNS MAY MEAN THEY HAVE TO TRAVEL FURTHER IN SEARCH OF WATER — MOVING OUTSIDE PROTECTED AREAS AND COMING INTO MORE CONTACT WITH PEOPLE.



## ADÉLIE PENGUINS

ADÉLIE PENGUINS ARE 'TRUE' ANTARCTIC PENGUINS, MEANING THEY SPEND MOST OF THEIR TIME IN ANTARCTICA. BUT CLIMATE CHANGE IS REDUCING THE AMOUNT OF SEA ICE IN PARTS OF THE CONTINENT. ONE OF THE ADÉLIES' MAIN FOOD SOURCES, KRILL, BREEDS AND FEEDS UNDER THE SEA ICE. REDUCED SEA ICE MEANS REDUCED FOOD FOR THE ADÉLIE PENGUINS.



## EXTINCTION

GLOBAL WARMING IS LIKELY TO BE THE GREATEST CAUSE OF SPECIES EXTINCTIONS THIS CENTURY. THE INTERGOVERNMENTAL PANEL ON CLIMATE CHANGE SAYS A **1.5°C** AVERAGE RISE MAY PUT **20-30%** OF SPECIES AT RISK OF EXTINCTION. IF THE PLANET WARMS BY MORE THAN **3°C**, MOST ECOSYSTEMS WILL STRUGGLE.

